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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/530,156	08/31/2000	Oliver Hecker	AP9472	3844

10291 7590 04/18/2002

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EXAMINER

BURCH, MELODY M

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 04/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/530,156

Applicant(s)

HECKER ET AL.

Examiner

Melody M. Burch

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,10,11 and 13-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,10,11 and 13-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 17 December 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 14 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 14 fails to depend from a previous claim.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 10, 11, 13, 14, 15, 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by DE-19501760 (corresponding to U.S. Patent 5727852 to Pueschel et al. for column, line, and figure numbers).

Re: claims 1, 10, 11, 14, and 17-19. DE-19501760 shows in figure 8 a method of operating a brake assist system which comprises a first mode shown from T0 to T1 in which the brake assist system is not actuated, a second mode of operation shown from T1 to T3 and disclosed in col. 9 lines 32-36 in which after recognition of an emergency brake situation (the exceeding of a threshold) a pressure build-up of wheel brakes is generated, and a third mode of operation shown from T3 to the end of the x-axis and

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disclosed in col. 9 lines 36-40 which is provided for the transition from the second into the first mode of operation, comprising the steps of: monitoring the wheel brake pressure in the third mode of operation via elements 80 and 85 shown in figure 1, determining when the monitored wheel brake pressure is excessively elevated compared to the tandem master cylinder pressure (via the monitoring of the difference between the wheel brake and master brake cylinder pressures by determining when the master brake cylinder pressure drops below a threshold as disclosed in col. 9 lines 35-40, and diminishing the amount of excess elevation in the course of time as shown in figure 8 from T3 to the end of the x- axis.

Re: claim 13. It is inherent that the ratio of the wheel brake pressure and the master brake cylinder pressure is equal to some time dependent constant of proportionality or momentary value as evident from the plot of figure 8.

Re: claim 15. Pueschel et al. show in the area of the red perforated lines of the attached copy of figure 8 the limitation of declining the excess elevation function in time intervals in which the master cylinder pressure is declining as evident by the sharper decrease in the wheel brake pressure compared to the master cylinder pressure.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over DE-19501760 in view of US Patent 4798422 to Becker. Pueschel et al. show in the area of the grey perforated lines of the attached copy of figure 8 time intervals in which the master cylinder pressure is increasing. Although the wheel brake pressure is increasing in this interval as well, it is not disclosed or shown that the excess elevation function is kept constant in this time interval. Becker teaches in col. 5 lines 18-26 the use of brake control apparatus in which the wheel brake pressure is determined as a function of the master cylinder pressure and in which the pressure difference between the wheel brake pressure and the master cylinder pressure is monitored. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Pueschel et al. with an interval in which the wheel brake pressure is directly proportional to the master cylinder pressure such that a wheel brake pressure increase mirrors a master cylinder brake pressure increase, in view of the teachings of Becker, in order to achieve a desired brake actuating comfort level.

Response to Arguments

6. Applicant's arguments filed 3/6/02 have been fully considered but they are not persuasive.

Re: claim 1. Applicant argues that Pueschel teaches reducing the wheel brake pressure as a function of time throughout the duration of the third mode of operation since Pueschel teaches in col. 9 lines 36-40 that from the point where the master brake cylinder pressure falls below threshold SB (indicating that the driver is no longer actuating the brake or desires a clearly smaller braking force), the wheel brake pressure

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drops to zero. Nevertheless, Examiner notes that in col. 9 lines 10-13 the invention of Pueschel provides for the wheel cylinder brake pressure to be monitored (and provides for this monitoring to occur prior to query 790 in figure 7) even after the master cylinder pressure falls below its threshold value SB to determine if the driver is again actuating the brake pedal more heavily. Thus, it is maintained that the wheel brake pressure is controlled as a function of the monitored master cylinder pressure throughout the duration of the third mode of operation. Applicant further points out that "...Because the wheel brake pressure in Pueschel is diminished according to a time dependent function, rather than as a function of the master cylinder pressure, the wheel brake pressure decreases even though the master cylinder pressure increases..." Examiner notes that just because the wheel brake pressure decreases despite an increase in master cylinder pressure, it cannot be concluded that the wheel brake pressure is not diminished as a function of the master cylinder pressure. As noted above, Pueschel discloses in col. 9 lines 13-14 that the master cylinder pressure continues to be monitored (for example, by determining if the master cylinder pressure is greater than a specifiable threshold value) even after it is determined that the master cylinder pressure falls below threshold SB. Therefore, it is suggested that the wheel brake pressure after point T3 decreases even though the master cylinder pressure increases since the master cylinder pressure did not increase beyond the abovementioned specifiable threshold value. In the above example, even though the wheel brake pressure did not respond in the same manner as the master cylinder pressure, it is evident that the

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wheel brake pressure is diminished as a function of the monitored master cylinder pressure.

Re: claim 13. Examiner maintains that a momentary value of the wheel brake pressure PRZ is determined by multiplying a momentary value of a time-dependent excess elevation function with the momentary value of the master cylinder pressure PHZ during the portion of the third mode of operation immediately before the point where the master cylinder pressure PHZ increases. The claim does not require that the sub step of determining the momentary value be done over the duration of the third mode.

7. Applicant's arguments with respect to claims 15 and 16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 6226586 to Luckevich et al. teaches the use of determining a brake signal based on master cylinder pressure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone numbers

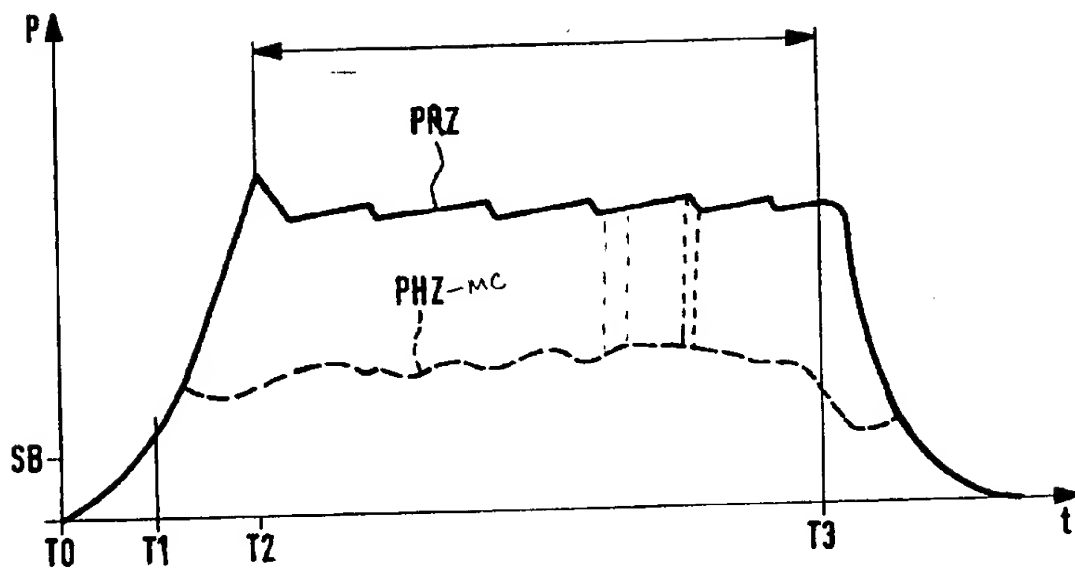


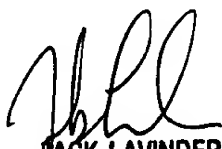
Fig. 8

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for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

10. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

mmb 4/12/02
mmb
April 12, 2002


JACK LAVINDER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

4/15/02